REVIEWS.

Clinical Treatises on the Pathology and Therapy of Disorders of the Metabolism and Nutrition. Part IV. The Acid Autointoxications. Part V. Concerning the Effect of Saline Waters on Metabolism." By Prof. Carl von Noorden and Dr. Carl Dapper. New York: E. B. Treat & Co., 1904.

Most interestingly expressed and clearly defined are the authors' views on the difficult subject of defective metabolic processes with the resultant intoxications. Acetone, formerly regarded as the cause of diabetic coma, is proven to be the least significant of the three acetone bodies: oxybutyric acid, diacetic acid, and acetone. The acetone bodies are regarded by the author as products which, under normal conditions, should have undergone further oxidation, that is, that with proper supply of oxygen they would not exist in the urine at all except as acetone in very small quantity. The appearance of β-oxybutyric acid in the urine, the undoubted cause of diabetic coma, is indicative of a very grave defect in oxidative function. The fact that the acetone bodies are non-toxic when taken by the mouth leads to the view that their effects are produced by union with the fixed alkalies of the body, and are thus poisonous because acid. Acetonuria, having been produced experimentally by starvation as well as by persistence in a meat-fat diet, and having been made to disappear by the addition of carbohydrates to the diet, the author is led to the conclusion that the acetone bodies appear solely because of lessened carbohydrate feeding. In regard to the *modus operandi* of the carbohydrates in this connection the suggestion is advanced that the influence is a contact effect, oxygen being liberated within the cell. In diabetes where the acetone bodies are excreted in quantities greater than in any other condition the cause is traced to several sources: the destruction of those cells which should aid in the disassimilation and oxidation of the bodies, the failure of combustion of even the small amounts of carbohydrate administered, and finally the small quantity of carbohydrate food actually taken. β-oxybutyric acid and diacetic acid may be made to disappear altogether in some cases of diabetes by administering certain quantities of carbohydrates, but this effect can never be produced unless some quantity of the carbohydrates undergo combustion and not all be passed unused. In such cases no benefit, but in all probability positive harm, would result from the administration of carbohydrates. von Noorden frankly points out several apparent fallacies in this theory of the etiology of the appearance of the acetone bodies, but as the fallacies are not insuperable we can afford to accept the theories and look for further elucidation along the same lines. The therapeutic measures of combating acidosis based on the theories evolved are divided into (1) means directed to the limitation of the formation of the acetone bodies; (2) means directed toward the disintoxication of the bodies circulating through the tissues and toward accelerating their elimination. The first is employed with every hope of immediate success in non-diabetic cases. In diabetes the difficulties are much greater, and here the treatment consists in careful administration of carbohydrates until the acidosis is diminished in quantity or that happy result obtained, the disappearance of all acid. von Noorden has had great success follow his oat-meal treatment. Finally, we have the power in many cases of neutralizing the acid by free use of sodium bicarbonate and sodium citrate given daily by mouth, or intravenously as sodium carbonate, in diabetic coma.

Part V. of von Noorden's series of treatises deals with the action of saline waters on metabolism, especially in those conditions most frequently seen at watering-places. While all the patients under the care of the author are put upon rigid measured diets, yet that this alone is not responsible for the cures reported is satisfactorily shown by control experiments in which the diet was not assisted by the waters, with, in most instances, less satisfactory and less rapid improvement. The effect of the saline waters is discussed in cases of alcoholic dyspepsia, hyperacidity, subacidity, anacidity, and obesity, and its use in aiding the elimination of uric acid. The author believes that the exclusion of fruit, vinegar, salads, etc., from the diet is not based on findings of scientifically conducted experiments. There are many exceptions taken to old fetishes held sacred at certain spas. von Noorden finds that fat in large quantities is readily absorbed by patients partaking of alkaline waters, and in selected cases is of the greatest benefit in the treatment, while, on the other hand, in treating obesity where fat in the diet is restricted or altogether interdicted, the waters do not increase the proteid metabolism, and thereby weaken the patient, as has been claimed. The treatise is full of interesting information conveyed in an authoritative way. J. N. H.

EVOLUTION AND ADAPTATION. By THOMAS HUNT MORGAN, Ph.D.
New York: The MacMillan Company, 1903.

THIS book, which numbers 464 pages, is arranged in the form of a critical review of the various theories and hypotheses which have been advanced for and against the doctrines of evolution and